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**ABSTRACT OF THE DISCLOSURE**

A balloon with the aerodynamic shape of a kite, preferably for use in an emergency rescue kit, for those stranded in a boat at sea, or injured or lost in the wilderness. The present invention consists of a balloon specifically shaped with an aerodynamic configuration with a leading edge and a trailing edge like an airplane wing, with a main body portion and a complementary cylindrical portion. This balloon is made of a radar reflective material with a high degree of resistance to puncture and deflation, preferably a biaxially oriented 48 gauge nylon laminated with a low density 70 gauge polyethylene, then sprayed with melted aluminum.

A valve, preferably a bladder valve, allows passage of gas in only one direction, into the body portion from the cylindrical portion. The invention is secured to the ground by a tether, preferably a string composed of a combination of nylon and silk. This string is attached to the balloon, preferably by glue with a high degree of resistance to outdoor environments, such as a hi-tack acrylic adhesive. It is affixed to a ring shaped element to which are also affixed a plurality of holding strings made of the same material as the tether string, such holding strings being affixed to a plurality of points on the circumference of the balloon in order to spread the stresses caused by wind on the balloon.

The balloon is preferably part of an emergency rescue kit which includes the kite balloon, a small cylinder containing helium to inflate the balloon by means of a manifold, and a portable container to hold the emergency kit. A retaining clip may be attached to the spout of the manifold in order to secure the kite balloon while it is being inflated.

### KITE BALLOON

The present invention relates to a balloon with the aerodynamic shape of a kite, preferably for use in an emergency rescue kit by those stranded in a boat at sea, or injured or lost in the wilderness.

Various types of balloons are known, but most do not meet the specific needs addressed by the present invention, such as aerodynamic lift, puncture resistance, light weight, resistance to harsh weather and a unique radar profile. Various types of kites are also known, but these do not have the ability to stay aloft for extended periods of time, especially in high winds.

10       It is desirable to have a balloon with an aerodynamic shape in order to provide the lift required to quickly and reliably raise the balloon and keep it aloft in high winds. It is also desirable to have a balloon which is lightweight and highly resistant to puncture, deflation and harsh weather, in order to allow for longer periods of lift, and with a high level of radar reflecting capability.

      The present invention consists of a balloon specifically shaped with an aerodynamic configuration with a leading edge and a trailing edge similar to an airplane wing. The balloon comprises two identical kite shaped body portions with a plurality of sides and preferably  
20       rounded corners, with a complementary cylindrical portion projecting from the bottom corner. This cylindrical portion may widen at the distal end to form a bulb shaped portion with a greater circumference than the remainder of the cylindrical portion. These identical sheets of material are made of a radar reflective material with a high degree

of resistance to puncture and deflation, preferably a biaxially oriented 48 gauge nylon laminated with a low density 70 gauge polyethylene, then sprayed with melted aluminum. The two sheets of this material are continuously joined for substantially their full circumference by a permanent means of attachment, leaving an opening at only the bottom margin of the bulbous portion for inflation of the balloon.

10 A valve, preferably a bladder valve, is placed at the juncture of the cylindrical portion of the balloon and the body portion. This valve allows passage of gas in only one direction, into the body portion from the cylindrical portion.

The means of attachment of the material may be glue. The means of joining the material may also be the application of heat.

20 The invention is secured to the ground by means of tethering, preferably a string composed of a combination of nylon and silk, such means of tethering being attached to the invention by a means of holding, preferably by affixing the tether string to a holding element by a means of bonding. Also affixed to the holding element, by a means of bonding, are a plurality of holding strings made of the same material as the tether string, such holding strings being affixed by a means of bonding to a plurality of points on the circumference of the balloon in order to spread the stresses caused by wind on the balloon. The holding element is preferably ring shaped.

The means of bonding may be glue with a high degree of resistance to outdoor environments such as a hi-tack acrylic adhesive.

The balloon may form part of an emergency kit which includes the kite balloon, a small cylinder containing helium to inflate the balloon by means of a manifold, and a portable container to hold the emergency kit. A retaining clip may be attached to the spout of the manifold in order to secure the kite balloon while it is being inflated.

The invention, as exemplified by a preferred embodiment, is described with reference to the drawings in which:

Figure 1 is a front view of an embodiment of the invention. Referring to the drawings, the embodiment of the invention shown, a  
10 balloon 10 comprises a kite-shaped body portion 12 and a complementary cylindrical portion 14. The cylindrical portion projects from the body portion at one of the corners 16 of the body portion. The cylindrical portion widens at the distal end to form a bulb shaped portion 18 with a greater circumference than the remainder of the cylindrical portion. It is at this point that the balloon is inflated.

The balloon is comprised of two sheets of flexible, radar reflective material with a high degree of resistance to puncture and deflation, preferably a biaxially oriented 48 gauge nylon laminated with a low density 70 gauge polyethylene, then sprayed with melted aluminum.

20 The two sheets of material are identical in shape, each comprising a kite shaped body portion and a cylindrical portion. They are continuously joined for substantially their full circumference 20 by a permanent means of attachment such as glue, leaving an opening 22 only at the bottom margin of the bulb for inflation of the balloon.

A valve 24 is placed at the juncture of the cylindrical portion and the body portion of the balloon, allowing passage of gas in only one direction, from the cylindrical portion into the body portion.

A string composed of a combination of nylon and silk secures the invention to the ground by means of ring shaped element 26 to which it is attached. This ring shaped element is secured to the balloon by means of a plurality of strings 28, 30 and 32 attached to a plurality of points 34, 36 and 38 on the circumference of the balloon. The string is preferably attached to the balloon and ring shaped element by a glue  
10 with a high degree of resistance to outdoor environments, such as a hi-tack acrylic adhesive.

Although only a single embodiment of the present invention has been described and illustrated, the present invention is not limited to the features of this embodiment, but includes all variations and modifications with the scope of the claims.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A balloon, preferably for use in emergency rescue kits, comprising:

an inflatable body portion and complementary cylindrical portion with an opening at the distal end for inflation of said balloon, both said portions composed of a flexible, radar reflective material with a high degree of resistance to puncture and deflation, said cylindrical portion being used for inflation of the device.

2. A balloon as claimed in claim 1, wherein the device may be secured to the ground by a means of tethering attached to the invention by a means of holding.

3. A balloon as claimed in claim 2, wherein said means of tethering consists of a string composed of a combination of nylon and silk.

4. A balloon as claimed in claim 2, wherein said means of holding consists of affixing the tether string to a holding element by a means of bonding, said holding element being composed of a rigid material, said holding element also being affixed by said means of bonding to a plurality of holding strings made of the same material as the means of tethering, said holding strings being affixed by said means of bonding to a plurality of points on the circumference of said balloon.

5. A balloon as claimed in claim 4, wherein said holding element is circular in shape.

6. A balloon as claimed in claims 4 or 5, wherein said means of bonding consists of glue with a high degree of resistance to outdoor environments.

7. A balloon as claimed in claim 1, wherein said body portion has a spherical shape.

8. A balloon as claimed in claim 1, wherein said balloon is composed of two sheets of said material, continuously joined at their circumference by a means of joining, leaving an opening at the distal end of said cylindrical portion for inflation of said balloon.



9. A balloon as claimed in claim 8, wherein said means of joining consists of glue with a high degree of resistance to outdoor environments.

10. A balloon as claimed in claim 8, wherein said means of joining consists of the application of heat.

11. A balloon as claimed in claims 8, 9 or 10, wherein said body portion is has a circular shape.

12. A balloon as claimed in claims 8, 9 or 10, wherein said body portion has a four sided shape and rounded corners.

13. A balloon as claimed in claim 1, wherein said cylindrical portion widens at the distal end in order to accommodate a mechanism for inflation of the device.

14. A balloon as claimed in claim 13, wherein said wider end of said cylindrical portion is bulb shaped.

15. A balloon as claimed in claim 1, wherein a valve is inserted into said cylindrical portion, allowing passage of gas only from said cylindrical portion into said body portion.

16. A balloon as claimed in claim 15, wherein said valve is inserted at the point of juncture of said body portion and said cylindrical portion.

17. A balloon as claimed in claims 14 or 15, wherein said valve is a bladder valve.

18. A balloon, preferably for use in emergency rescue kits, comprising:

an inflatable body portion and complementary cylindrical portion, both said portions composed of a flexible, radar reflective material with a high degree of resistance to puncture and deflation, said cylindrical portion being used for inflation of the device;

said balloon capable of being secured to the ground by a tethering string composed of a combination of silk and nylon;

said string being secured to said balloon by means of affixing said string to a circular element comprised of a rigid material, said circular element secured to said balloon by a plurality of holding strings composed of the same material as said tethering string, said holding strings affixed to a plurality of points on the circumference of said balloon;

said balloon, circular element and holding strings affixed to each other by means of glue with a high degree of resistance to outdoor environments, preferably a hi-tack acrylic adhesive;

said body portion and cylindrical portion of said balloon being composed of two sheets of said material, continuously joined at the circumference by glue with a high degree of resistance to outdoor environments, preferably a hi-tack acrylic adhesive, leaving an opening at the distal end of said cylindrical portion for inflation of said balloon, said sheets of material for said body portion having a four sided shape and rounded corners;

said cylindrical portion widening into a bulb shape at the distal end to accommodate a mechanism for inflation of said balloon;

said cylindrical portion containing a bladder valve allowing the passage of gas only from said cylindrical portion into said body portion.



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**TITLE:** Kite balloon with aerodynamic shape for emergency rescue kit to save stranded or injured people at sea or in wilderness has kite-balloon shaped with aerodynamic leading and trailing edges like aircraft wing, body made of radar reflective material exhibiting high degree of puncture resistance

**PATENT-ASSIGNEE:** LASIBO CORP INC[LASIN]**PRIORITY-DATA:** 1996CA-2172852 (March 28, 1996)**PATENT-FAMILY:**

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**BASIC-ABSTRACT:**

The balloon-kite consists of a balloon specifically shaped with an aerodynamic configuration with leading and trailing edges like an aircraft wing, main body portion and a complementary cylindrical portions made of radar reflective material with high degree of resistance to puncture and deflation, preferably a biaxially oriented 48 gauge nylon laminated with a low density 70 gauge polyethylene, then sprayed with melted aluminium. A valve, preferably a bladder valve, allows passage of gas only in one direction, into the body portion from the cylindrical portion.

The balloon is secured to the ground by a tether, preferably a string composed of a combination of nylon and silk, attached to the balloon, preferably by glue with a high degree of resistance outdoor environments, such as a hi-tack acrylic adhesive. The string is affixed to a ring shaped element to which are also affixed a number of holding strings made of the same material as the tether string, affixed to a number of points on the circumference of the balloon in order to spread the stresses caused by wing on the balloon.

USE - As emergency rescue kit which includes kite balloon, small cylinder containing helium to inflate balloon by manifold and portable container to hold emergency kit. Retaining clip may be attached to spout of manifold in order to secure kite balloon while it is being inflated.

**CHOSEN-DRAWING:** Dwg.1/1

**TITLE-TERMS:** KITE BALLOON AERODYNAMIC SHAPE  
EMERGENCY RESCUE KIT SAVE STRAND  
INJURY PEOPLE SEA LEADING TRAILING  
EDGE AIRCRAFT WING BODY MADE  
RADAR REFLECT MATERIAL EXHIBIT  
HIGH DEGREE PUNCTURE RESISTANCE

**DERWENT-CLASS: Q25**

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